



**King County
International Airport**

Department of
Construction & Facilities Management

P.O. Box 80245
Seattle, WA 98108

(206) 296-7380

(206) 296-0100 TDD

(206) 296-0190 FAX

August 19, 1999

Mike Skagen
D.A. Zuluaga Construction, Inc.
652 SW 143rd
Seattle, WA 98166

Subject: Oil Separator # 16 Lid Failure

Dear Mr. Skagen:

As a result of Pipe, Inc.'s letter dated 8-10-99 that we had over-stressed the lid again with the rear tires of the Boeing Fire Oshkosh T-3000, I made some measurements on the truck. The vault was to have been designed to handle AASHTO H20 loading, which has a wheel loading of 32,000 pounds per each of the two rear axles and 8,000 pounds for the front axle with an overall vehicle weight of 36 tons or 72,000 pounds. This equates to 16,000 pounds for one side of the rear pair of wheels. With the location of the oil separator being as it is, only one side of wheel/axle of a vehicle could ever cross the lid at one time, so the loading it should withstand would be at least 16,000 pounds.

The Boeing ARFF vehicle weighs 68,800 pounds with weight spread over 6 oversize tires. The rear wheel assembly has a bogie wheelbase of 60" as noted on the Oshkosh specification sheet. This means that one of the rear tires supports 11,320 pounds and one of the front tires supports 11,760 pounds, based on the manufacturer's weight distribution. The metal access cover on the oil separator is 36" by 75" with direction of vehicle travel lining up with the shorter dimension. With the 60" wheelbase, only one tire would load the cover at one time. Because the tires are oversize (approximately 21" wide by 50" overall diameter), there is a larger contact area. Even with this squatting of the tire, I measured about 40" between the contact surfaces of the two tires. This is still greater than the 36" dimension.

From the above I conclude that the oil separator cover is not being loaded over the H20 standard. Therefore, I will not be paying the cost of the repairs since this was more likely a material failure of the lid. It would seem prudent to go to a lid with a smaller round cast iron access cover as has been suggested so that we don't have a third failure. Please let me know when the damaged cover will be replaced.

Should you have any questions, please contact me at (206) 296-7425.

Sincerely yours,

Jeffrey W. Winter, P.E.
Airport Engineer

Cc: Mike Hamm, Airport Maintenance Manager

c63179cletter8-19-99.doc



KCSlip4 52931

SEA419291